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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,999	04/06/2004	Jeffrey Alan Kautzer	GEMS 0245 PUS	2998

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ARTZ & ARTZ, P.C.
28333 TELEGRAPH RD.
SUITE 250
SOUTHFIELD, MI 48034

EXAMINER	
SONG, HOON K	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/708,999	KAUTZER ET AL.	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/6/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "direct detector cooling system" and "anode cooling system" as claimed in claim 5 (note: numerical 49 in figure 1 does not seem a cooling system), "stationary collimator" as claimed in claim 12 (note: numerical 92 in figure 1 does not seem collimator), "a common conditioner" and "multiple chiller" as claimed in claim 18 and "the platform having a hemispherical, cubicle, linear, and irregular shape" as claimed in claim 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 5 and 11 are objected to because of the following informalities:

In claim 5 at line 2-3, "cooled said liquid" should read --cooled by said liquid--.

In claim 11 at line 2, "several technologies" should read --technologies--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-12, 16-17 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Bailey et al. (US 6914959).

Regarding claim 1, Bailey teaches a scanning system comprising:

a mount ;

a detector (24) coupled to said mount and detecting a first X-ray flux and a second X-ray flux and generating at least one detector signal therefrom;

a first emitter (22a) coupled to said mount and generating said first X-ray flux at a first angle relative to said detector;

a second emitter (22b) coupled to said mount and generating said second X-ray flux at a second angle relative to said detector; and

a computer (80) activating said first emitter and said second emitter for electronic scanning such that said first emitter and said second emitter are activated in a source pattern including at least one of a sequential pattern, a random pattern, a simultaneous pattern, or a partial scan pattern, said computer receiving said at least one detector signal and generating an image signal therefrom (figure 1).

Regarding claim 2, Bailey teaches a mount motor controller, wherein said mount comprises a platform moving said first emitter and said second emitter in response to signals from said mount motor controller (Bailey's gantry is considered to rotate by a motor system, figure 1).

Regarding claim 3, Bailey teaches said mount further defines a holding area (O-shaped gantry) for supporting patient tissue (figure 1).

Regarding claim 4, Bailey teaches said detector further comprises a plurality of modules (detectors, 24) receiving said first X-ray flux and said second X-ray flux.

Regarding claim 6, Bailey teaches a plurality of stationary X-ray sources (22a, 22b) generating a plurality of respective X-ray fluxes at varying angles with respect to said detector.

Regarding claim 7, Bailey teaches each emitter is collimated to view an entire field of view of said detector (figure 1).

Regarding claim 8, Bailey teaches said angle through which said first emitter and said second emitter sweep include a number of emission flux angles but not

necessarily all angles required for a particular application (focal spot scanning, column 5 line 1).

Regarding claim 9, Bailey teaches said computer generates said image signal as a function of emitter exposure time and a detector readout (36, reconstruction image).

Regarding claim 10, Bailey teaches said first emitter (22a) and said second emitter (22b) electronically gate (84) said first X-ray flux and said second X-ray flux.

Regarding claim 11, Bailey teaches said first emitter and said second emitter comprise at least one of technologies comprising thermal emission filaments (figure 1).

Regarding claim 12, Bailey teaches a stationary pre-patient collimator (18) aligning said first X-ray flux and said second X-ray flux with respect to said detector (figure 1).

Regarding claim 16, Bailey teaches a scanning system comprising:

a mount comprising a platform, wherein said mount further defines (O-shaped gantry) a holding area for supporting patient tissue (62);

a mount motor controller moving at least one of said mount or said platform in response to adjustment signals, a detector (24) coupled to at least one of said mount or said platform and comprising a plurality of modules (detectors, 24) receiving a plurality of X-ray fluxes and generating detector signals therefrom;

a plurality of X-ray sources (22a, 22b) coupled to said platform and generating said plurality of X-ray signals at various angles with respect to said detector; and

a computer (80) generating said adjustment signals as a function of parameters of said patient tissue, said computer further generating an image signal as a function of said detector signals (36).

Regarding claim 17, Bailey teaches said mount is arranged for a scanning procedure comprising at least one of mammography, computed tomography (CT), vascular X-ray imaging, bone scanning, weld inspection, or metal inspection (abstract). 17 and

Regarding claim 19, Bailey teaches 19. The system of claim 16, wherein said plurality of X-ray sources electronically gate (84) said plurality of X-ray fluxes.

Regarding claim 20, Bailey teaches said platform comprises a hemispherical, cubicle, linear, or irregular shape (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey in view of Sugihara et al. (US 5761269).

Regarding claim 5, Bailey fails to teach at least one of a liquid cooling system, wherein said detector is cooled said liquid cooling system and a cooling system directly cooling an anode of the scanning system nor at least one of a liquid cooling system, a

common conditioner for said sources and said detector, or multiple chillers for said sources and said detector.

Sugihara teaches an x-ray CT system having source and detector cooling system (figure 4a).

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the CT system of Bailey with the CT cooling system as taught by Sugihara, since the cooling system of Sugihara would provide efficiently maintaining an inside of a frame to within a predetermined temperature range under increased heat conditions associated with improved functionality and application of the CT system and other various working condition (column 2 line 28-35).

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US 6292531B1) in view of Pellegrino et al. (US 5594769).

Regarding claim 13, Hsieh teaches a mammography scanning system having a detector comprising:

a plurality of X-ray emitters adapted to generate a plurality of X-ray fluxes, said plurality of X-ray emitters coupled to a support system (Hsieh's x-ray sources are considered to be supported on a support structure) and directed towards a common focus at varying angles with respect to said focus, wherein each of said plurality of X-ray emitters is collimated to view an entire detector field of view (figure 5).

However Hsieh fails to teach an arc-shaped support system.

Pellegrino generally teaches an x-ray mammography system having a support system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the mammography system with arc-arrangement of source array of Hsieh with the support system as taught by Pellegrino, since the support system of Pellegrino would securely support the arc-arrangement of source array and would perform it's desired movement to image the object.

Regarding claim 14, Hsieh teaches said angle through which said first emitter and said second emitter sweep include a number of emission flux angles but not necessarily all angles required for a particular application (focal spot scanning, column 5 line 1).

Regarding claim 15, Hsieh teaches said plurality of X-ray emitters electronically gate said plurality of X-ray fluxes (focal spot scanning, column 5 line 1).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS 12/7/05
HKS

DAVID V. BRUCE
PRIMARY EXAMINER